Using Seismology for Regional Confidence Building

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Seismology can be used to assure that nuclear testing is not taking place. The technology and its limitations are known and understood by seismic experts and research programs throughout the world. It is the principal technology used for monitoring underground nuclear test limitation treaties, and it is an essential component for mitigating geophysical hazards. A four-step strategy is proposed for establishing seismology as a regional confidence-building tool.

The first step would be to establish a regional seismology working group. Broadly, this group would provide a forum through which the regional parties could monitor areas of concern for earthquake hazards and analyze regional seismic sources. Specifically, the group could be used to jointly interpret and analyze data, resolve suspicious events, and initiate further confidence-building steps. The second step would be to establish facilities for data processing and analysis and provide access to open sources of data. The third step would be to conduct cooperative calibration experiments to increase the efficiency of the monitoring methods. These calibration experiments could be either dedicated explosions or well-located commercial mining activity. The final step would be to encourage the regional parties to collaborate in making on-site measurements, which would be used to help identify ambiguous events.

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